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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
STOCK JR, GORDON J	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,010	IBSEN ET AL.	
	Examiner	Art Unit	
	Gordon J Stock	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *March 22, 2004;April 15, 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *51-94* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *51-70,73,74,80-82,84-86,88,89,92 and 93* is/are rejected.

7)☒ Claim(s) *71,72,75-79,83,87,90, 91 and 94* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20040322;20040415*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on March 22, 2004 has been entered.

Allowable Subject Matter

2. The indicated allowability of **claims 51-94** is withdrawn in view of the newly discovered reference(s) to Yoshida et al. (JP 05-203824), Jeon (U.S. 6,385,160), and Tsuyoshi et al. (U.S. 4,796,246). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claim 88** is rejected under 35 U.S.C. 102(b) as being anticipated by **Yoshida et al. (JP 05-203824**—citations from machine translation)

As for **claim 88**, Yoshida in an optical pickup device discloses the following: a transparent body having a front side and a back side (Drawing 3: 100), the front side including an entrance surface having at least one input means for inputting light from the at least one object

which can either be considered the optical disk or the light source itself (at 102 or at 106), at least a first front reflecting surface (104), and the back side including at least a first back reflecting surface (108, 103, 105), an exit surface where the detector is (110); two diffracting means on the front side (102, 106); a focusing means (109 and 108); the diffracting means (102) disperses divergent light from the light source; light detecting means (110).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 51, 55, 56, 57, 60-62, 73, 74, and 89** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al. (JP 05-203824**—citations from machine translation).

As for **claims 51, 55, 56, 57, 60-62, 73, and 74,** Yoshida in an optical pickup apparatus discloses the following: a transparent body having a front side and a back side (Drawing 3: 100), an entrance surface and at least a first front reflecting surface (at 102; 104), and the back side with at least a first back reflecting surface (108, 103, 105) and an exit surface where light goes to a detector (at 110); two diffracting elements (102 and 106); and at least two focusing elements (108, 109); the first diffractive element dispersing diverging light from the light source (102); a light detector unit (110); as for an aperture Yoshida is silent; however, Drawing 3 suggests apertures for light enters at 102 and 106 and exits at 106 and 110 of Drawings. Therefore, it would be obvious to one skilled in the art that the transparent substrate comprised an entrance aperture in order for light to enter the substrate at 102. Drawing 3 shows that the diffractive

elements and the exit surface are parallel as well as the exit and entrance surfaces. As for an aspheric surface, Drawing 2 has an aspheric focusing element (35). Therefore, it would be obvious to one skilled in the art to have embodiment of drawing 3 to have an aspheric element for drawing 2 suggests that an aspheric element is functionally equivalent to 106 and 107 for focusing light onto and receiving light from an optical disk. The detector appears to be at a selected distance from the exit surface (Drawing 3: 110). The transparent body is a unitary body, a transparent substrate (100). As for a reference light source, there is 101 for both producing optical data measuring signals from the disk and for producing reference signals such as for focusing and tracking purposes (paragraph 006).

As for **claim 89,** Yoshida in an optical pickup apparatus discloses the following: inputting signal light from an object, a light source, (Drawing 2: 38) to a transparent body on a first side; propagating divergent signal light to a diffractive element on a second side (32); diffracting the divergent signal light into divergent separated wavelength components, diffraction order components; reflecting focusing divergent diffraction order components to an exit face using a focusing reflector (36 to exit face at 44); detecting diffraction order components with detector (44). As for an aperture Yoshida is silent; however, Drawing 2 suggests apertures for light enters at 31 and exits at 38 and 35 of Drawings. Therefore, it would be obvious to one skilled in the art that the transparent substrate comprised an entrance aperture in order for light to enter the substrate at 31.

7. **Claims 52-54** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al.** ~~(JP 05-203824 =citations from machine translation) in view of Hopkins, II (5,644,396)~~ previously cited by Examiner.

As for **claims 52-53**, Yoshida discloses everything as above (see **claim 51**). However, he is silent concerning aberration correcting elements. But Yoshida in Drawing 2 has an aspheric focusing element (35). And Hopkins teaches that aspheric elements are aberration-correcting elements that correct for spherical aberration and astigmatism (col. 3, lines 65-67; col. 4, lines 1-15). Therefore, it would be obvious to one skilled in the art to have the embodiment of drawing 3 to have an aspheric focusing element, an aberration correcting element, for drawing 2 suggests that an aspheric element is functionally equivalent to 106 and 107 for focusing light onto and receiving light from an optical disk.

As for **claim 54**, Yoshida in view of Hopkins discloses everything as above (see **claim 52**). However, Yoshida is silent concerning tilting exit surface. Hopkins teaches tilting detector surface to compensate for chromatic aberration (col. 3, lines 60-65). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the exit surface and detector surface tilted in order to compensate for chromatic aberration.

8. **Claim 58** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al. (JP 05-203824**—citations from machine translation) in view of **Ridyard et al. (5,812,262)**—cited by applicant.

As for **claim 58**, Yoshida discloses everything as above (see **claim 51**). Yoshida is silent concerning a slit. However, Ridyard in a radiation detector teaches a transparent body with an entrance aperture defined by a slit (Fig. 1, **18**). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the entrance aperture comprise a slit in order to control the amount of light entering by the area of the slit.

9. **Claim 59, 63, 64** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al. (JP 05-203824**—citations from machine translation) in view of **Lemoff et al. (6,198,864)**—previously cited by Examiner.

As for **claim 59**, Yoshida discloses everything as above (see **claim 51**). However, he is silent concerning an exit face of an optical fiber. However, Lemoff in an optical integrated circuit system with a transparent body teaches an entrance aperture includes an exit face of an optical fiber (Fig. 2; col. 5, lines 10-35). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the entrance aperture include an exit face of an optical fiber to couple the light into the transparent body from the light source.

As for **claims 63 and 64**, Yoshida discloses everything as above (see **claim 51**). He is silent concerning the substrate being a composite or two body parts. However, Lemoff teaches that Fig. 1 of Lemoff is a composite in order to have a lens array for focusing wherein the first body part includes the front side and the second body part includes the back side (Fig. 1 in view of unitary body of Fig. 2; col. 7, lines 25-35) which also suggests that there is an equivalence between a system comprising two transparent bodies and a system comprising an integrated unitary body. Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the transparent body be a composite in order to incorporate in a lens array for focusing.

10. **Claims 65-66** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al. (JP 05-203824**—citations from machine translation) in view of **Lemoff et al. (6,198,864)** ~~further in view of **Ridyard et al. (5,812,262)**—cited by applicant-- further in view of **Lim (5,504,629)**~~—previously cited by Examiner.

As for **claim 65**, Yoshida in view of Lemoff discloses everything as above (see **claim 64**). However, they are silent concerning light absorbing material disposed between the first and second body parts. Ridyard in a waveguide for a radiation detection system teaches optical baffles between the front and back sides of the transparent body (Fig. 1, **13** and **15**). In addition, Lim in an optical projection system teaches that the optical baffle comprises light absorbing regions (col. 2, lines 12-15). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the apparatus comprise optical baffles comprising light absorbing materials disposed between the front and back side of the transparent body in order to regulate light travel within the transparent substrate.

As for **claim 66**, Lemoff discloses a plurality of intermediate body parts, spacers and mechanical features (Fig. 2 in view of Fig. 1; see **claim 64** above). As well Ridyard in a waveguide for a radiation detection system teaches optical baffles between the front and back sides of the transparent body (Fig. 1, **13** and **15**). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the apparatus comprise optical baffles between the front and back side in order to regulate light travel within the spectrometer.

11. **Claims 67 and 68** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al. (JP 05-203824**—citations from machine translation) in view of **Ridyard et al. (5,812,262)**—cited by applicant.

As for **claim 67**, Yoshida discloses everything as above (see **claim 51**). However, he is silent concerning covering the transparent body by light absorbing material. Ridyard in a waveguide for a radiation detection system teaches covering the transparent body with light absorbing material for minimizing internal reflections (col. 4, lines 30-40). Therefore, it would

be obvious to one skilled in the art at the time the invention was made to cover the transparent body with light absorbing material in order to minimize internal reflections.

As for **claim 68**, Yoshida in view of Ridyard discloses everything as above (see **claim 67**). In addition, Ridyard teaches that the refractive index of the light absorbing material is close to the transparent body's refractive index (col. 4, lines 38-40).

12. **Claim 69** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al. (JP 05-203824**—citations from machine translation) in view of **Ridyard et al. (5,812,262)**—cited by applicant--and further in view of **Uehara et al. (4,332,706)**—previously cited by Examiner.

As for **claim 69**, Yoshida in view of Ridyard discloses everything as above (see **claim 67**). However, they are silent concerning coating the body with light-absorbing material. Uehara in an internal reflection suppressing coating material for optical glass teaches a coating material for suppressing detrimental reflections of light by internal surface in optical parts (col. 1, lines 6-10 and lines 55-65). Therefore, it would be obvious to one skilled in the art at the time the invention was made to coat the transparent body with light-absorbing material to suppress internal reflections.

13. **Claim 70** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al. (JP 05-203824**—citations from machine translation) in view of **Ridyard et al. (5,812,262)**—cited by applicant--and further in view of **Uehara et al. (4,332,706)** and further in view of **Ohkubo et al. (5,622,904)**—previously cited by Examiner.

As for **claim 70**, Yoshida in view of Ridyard discloses everything as above (see **claim 67**). However, he is silent concerning the light absorbing material being molded into the

transparent body. And Ridyard discloses gluing the black glass to the body (col. 4, lines 38-60). Uehara in an internal reflection suppressing coating material for optical glass teaches a coating material for suppressing detrimental reflections of light by internal surface in optical parts (col. 1, lines 6-10 and lines 55-65) and Ohkubo in a glass material for molding optical elements teaches applying the films prior to molding the component (col. 8, lines 50-55). Therefore, it would be obvious to one skilled in the art at the time the invention was made to coat the glass prior to molding in order to mold the light absorbing material into the shape of the transparent body; whereas, the transparent body will have suppressed internal reflections.

In addition, as for the statement, "molded into the transparent body," "even though product-by-process claims are limited by and defined by a process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe, 777 F. 2d 695,698, 227 USPQ 964,966 (Fed. Cir. 1985).*

14. **Claims 80-82, 84-86, 92, 93** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al. (JP 05-203824**—citations from machine translation) in view of **Tsuyoshi et al. (4,796,246)** and **Jeon (6,385,160)**.

As for **claims 80-82, 84-86, 92-93,** Yoshida discloses everything as above (see **claims 51 and 89**). In addition, he discloses a substantially monochromatic light source, a semiconductor laser (101) and that the array detector, the hyperfractionation photodetector, 110, that has focusing servo and tracking servo signals (paragraph 006). There are also means for focusing light to the detector (109). As for distance determining unit, distance light detector, detecting

position of light spot from diskette with object distance value, he is silent. However, Jeon in a pickup adjusting apparatus teaches that focusing and servo control needs distance from the diskette to the pickup device to correct for errors (col. 1, lines 30-45) and Tsuyoshi in an optical disk apparatus teaches determining position of beam spot for track servo control (col. 1, lines 35-55). Therefore, it would be obvious to one skilled in the art that the hyperfractionation detector acts as a distance detector and that the position of the beam spot and the distance of the diskette (beam spot on diskette) to the transparent substrate are measured and determined, for the detector also has signals for focusing servo and tracking servo signals which need the distance of the beam spot and the position of the beam spot in order to correct for errors in tracking and focusing.

Allowable Subject Matter

15. **Claims 71, 72, 75-79, 83, 87, 90, 91, and 94** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claim 71**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an apparatus for measuring spectral information at least spectrometer channel paths between the at least one entrance aperture and the light detector unit in combination with the rest of the limitations of **claims 72.**

As to **claim 75,** the prior art of record, taken alone or in combination, fails to disclose or render obvious in an apparatus for measuring spectral information wherein the light illuminates the object in a transmission configuration in combination with the rest of the limitations of **claims 75.**

As to **claim 76**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an apparatus for measuring spectral information the particular measuring channel and reference channel in combination with the rest of the limitations of **claims 76-79.**

As to **claim 83**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an apparatus for measuring spectral information a bandpass filter in combination with the rest of the limitations of **claim 83.**

As to **claim 87**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an apparatus for measuring spectral information modifying spectrum measurement signals based on the object distance value in combination with the rest of the limitations of **claim 87.**

As to **claim 90**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of measuring spectral information of light from an object the particular reflections prior to being incident on the diffractive element in combination with the rest of the limitations of **claim 90.**

As to **claim 91**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of measuring spectral information of light from an object reducing spectral influence of the reference light on a spectrum signal generated by the detector unit in combination with the rest of the limitations of **claim 91.**

As to **claim 94**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of measuring spectral information of light from an object adjusting a spectrum signal generated by the detector unit in response to the distance determined between the object and the distance detector in combination with the rest of the limitations of **claim 94.**

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: **(703) 872-9306**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431. The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

gs
June 8, 2004

Zandra V. Smith
Primary Examiner
Art Unit 2877